

### **REMARKS**

This Amendment is in response to an Office Action mailed October 26, 2005. In the Office Action, claims 2-31 were rejected under 35 U.S.C. §103(a). Applicants respectfully traverse all of the §103(a) rejections and respectfully request the Examiner to reconsider the allowability of these claims. Claims 2, 12-13, 28 and 30 have been amended. Claims 32-35 have been added.

#### ***Request for Examiner's Interview***

The Examiner is respectfully requested to contact the undersigned attorney if after review, such claims are still not in condition for allowance. This telephone conference would greatly facilitate the examination of the present application. The undersigned attorney can be reached at the telephone number listed below.

#### ***Rejection Under 35 U.S.C. § 103***

##### **A. §103 REJECTION OF CLAIMS 1-5, 14, 18-19 AND 30-32**

Claims 10, 12-16, 18-20, 22, 24 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Beach (U.S. Patent No. 6,067,297) in view of Chesson (U.S. Published Application No. 2002/0045428). Applicant respectfully traverses the rejection because a *prima facie* case of obviousness has not been established.

As the Examiner is aware, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. *See MPEP §2143; see also In Re Fine, 873 F. 2d 1071, 5 U.S.P.Q.2D 1596 (Fed. Cir. 1988).* Herein, the combined teachings of the cited references fail to describe or suggest all the claim limitations.

With respect to independent claims 10 and 15, Applicants agree that Beach does not disclose a first frame check sequence or load balancing information with a modified beacon broadcast by the AP. However, Applicants respectfully disagree with the Examiner that Chesson teaches these claim limitations. Rather, Chesson teaches a beacon with load assignment information. In other words, Chesson teaches a beacon that directs nodes *when to use particular timeslots* in order to attempt to optimize communications between that AP and a set of nodes. *Emphasis added.*

In contrast, the claimed invention involves the transmission of load balancing information from the AP to the wireless units (WUs) so that the WUs may balance load amongst the set of APs. That is, the load balancing information assists the WUs, normally during their roaming

decision, to select APs with lighter loads in lieu of APs with heavier loads. Examples of different types of "load balancing" information are set forth on page 8 of the specification and include, but are not limited or restricted to a count of the number of WUs currently associated with an AP (claim 12) and a count of the associated WUs that are busy, namely communicating with the AP at a rate or volume that is above a threshold (claim 13).

Moreover, The Office Action further states that the "modified beacon teachings of Chesson are directed towards frame-based communications. While the combined teachings of Beach and Chesson do not specifically disclose frame check sequence (FCS), the Examiner takes official notice that FCS is well known in the art." Applicants timely challenge the Official Notice in accordance with MPEP § 2144.03.

Therefore, since Chesson directs the nodes when to use a given carrier/timeslot to optimize slot assignments during a Contention Free Period only and fails to describe or suggest the transmission of load balancing information with the modified beacon as claimed, withdrawal of the outstanding §103(a) rejection as applied to independent claims 10 and 15 is requested.

Similarly with respect to independent claim 20, Applicants respectfully submit that a *prima facie* case of obviousness has not been established. For this claim, the load balancing information is placed in a special data frame following the beacon. In contrast, the combined teachings of Beach and Chesson teach a beacon with load assignment information as described above and assigned data slots assigned to a particular node for a given carrier. The combined teachings, however, do not teach or suggest the limitations of "logic to broadcast...the data frame being a first frame transmitted after broadcasting the special DTIM beacon" and "the data frame comprises at least one of a load balancing information and a test pattern." Rather, as the Examiner has pointed out, the data slots 528 are assigned for unicast transmissions (i.e. to a particular WU) and are not reserved for broadcast of a data frame as claimed.

Hence, withdrawal of the outstanding §103(a) rejection as applied to independent claim 20 is respectfully requested.

In addition, based on the dependency of claims 12-14, 16, 18-19, 22, 24 and 29 on independent claims 1, 15 and 20, believed by Applicants to be in condition for allowance, no further discussion as to the grounds for traverse is warranted. Applicants reserve the right to present such arguments in an Appeal is warranted.

Withdrawal of the §103(a) rejection as applied to claims 10, 12-16, 18-20, 22, 24 and 29 is respectfully requested.

**B. §103 REJECTION OF CLAIMS 2-3, 5-8, 25-28, 30 AND 31**

Claims 2-3, 5-8, 25-28, 30 and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Beach in view of Chesson and a cited publication (Koutroubinas). Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been

established. In general, neither Beach, Chesson nor Koutroubinas, alone or in any combination, describe or suggest the invention as claimed.

We agree with the Examiner that Beach does not specifically disclose a data frame being the first frame transmitted after the beacon. However, Applicants respectfully disagree with the allegations that Chesson “teaches a modified beacon method, and further teaches a data frame (e.g. in the data slot at 528 in Fig. 1) is a first frame transmitted after the beacon (e.g. overlaid start beacon 520, see Fig. 1 and paragraphs 0048-0069).”

Chesson refers to a defined time slot that exists only after a Point Coordination Function “PCF” type beacon. *See paragraphs 0047 and 0052 of Chesson.* In essence, Chesson is teaching a new type of behavior following a PCF type beacon. But, IEEE 802.11 communications can operate in two different modes: contention and contention free. Operation in contention free mode requires use of a PCF type beacon, which indicates the length of the immediately following Contention Free Period (CFP). Typical operation during the CFP period is defined (by 802.11-1997) as the AP polling the associated stations for data transfers. Chesson teaches a new type of operation during the CFP period where multiple (overlaid) communications can take place simultaneously (under the control of a coordinator, e.g. the AP).

In Chesson, any given slot time (the 528 elements) is NOT for use exclusive by the AP for broadcast purposes, but is assigned to one of the associated stations/ nodes or “shared in time between several nodes including the controller node [AP]. *Emphasis added; see paragraph 0048 of Chesson.* There is nothing special noted about slot time 1 (the 528 element immediately after the PCF beacon). In contrast, the claimed invention is directed to transmissions of a beacon *with a special indicator (bit) set by an AP. Emphasis added.* The AP then immediately transmits a data frame *being a first frame transmitted after the beacon. Emphasis added.* This data frame is a special data frame that contains *load balancing information. Emphasis added.*

Use of time slot 1 as defined by Chesson (that immediately follows the PCF beacon) is controlled by the AP and assigned to one or more stations (for use in non-overlaid or overlaid mode). *See paragraph 0048 of Chesson.* Herein, the claimed invention does not assign slot 1 to subset groupings of stations/nodes/MUs, but instead, the time right after the beacon transmission is reserved for and used by the AP to send the special data frame to the MUs (providing the corresponding bit is set in the preceding beacon).

Moreover, Koutroubinas does not teach a beacon having a NAV value that is set to denote a transmission of a data frame after the special beacon. The passage reads “[e]very station in the network buffers its data and postpones any pending transmissions to the appropriate time instant, by setting its Network Allocation Vector (NAV) value.” This passage cannot and should not be generally construed to dismiss the limitation of a special DTIM beacon that comprises “a field having a traffic indicator bit that is set to denote a transmission of a data frame after the DTIM beacon” where this data frame is the first frame broadcast by the access point after the beacon. Presuming that the NAV value is a bit within the beacon, this bit, when set, does not denote a transmission of a data frame after the beacon, where the data frame is the *first* frame transmitted after broadcasting the beacon.

Hence, withdrawal of the §103(a) rejection as applied to independent claim 1 should be withdrawn.

In addition, based on the dependency of claims 3, 5-8, 25-28, 30 and 31 on independent claims 2 and 20, believed by Applicants to be in condition for allowance, no further discussion as to the grounds for traverse is warranted. Applicants reserve the right to present such arguments in an Appeal is warranted.

Withdrawal of the §103(a) rejection as applied to pending claims 2-3, 5-8, 25-28, 30 and 31 is respectfully requested.

C. §103 REJECTION OF CLAIM 17

Claim 17 rejected under 35 U.S.C. §103(a) as being unpatentable over Beach in view of Chesson and Coveley (U.S. Patent No. 5,548,821). Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been established.

First, the Office Action further states that the “modified beacon teachings of Chesson are directed towards frame-based communications. While the combined teachings of Beach and Chesson do not specifically disclose frame check sequence (FCS), the Examiner took official notice that FCS is well known in the art for frame-based communications.” Applicants respectfully traverse the Official Notice.

Applicants respectfully submit that neither Beach, Chesson nor Coveley, alone or in any combination, teach or suggest the use of multiple frame check sequences (FCSs) as claimed. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Applicants respectfully submit that none of the cited references suggest multiple FCSs, and in fact, such combination constitutes impermissible hindsight reconstruction.

Claim 17 is directed toward a novel use of frame check sequence (FCS), which is to include two FCSs in a given frame both decodable at the hardware level. As a result, legacy hardware can decode the beacon with new information elements (ending at the first FCS) and more recent hardware can receive that too and then additionally keep its receiver enables *after* receipt of the first FCS (where a legacy receiver would reset its frame detector after the first FCS and begin looking for a start of a new frame). In this way, the new hardware can receive the test pattern and subsequent, second FCS. Legacy equipment may be adapted to ignore the test pattern and the second FCS, treating it as noise.

D. §103 REJECTION OF CLAIMS 4, 9, 11, 21 AND 23

Claims 4, 9, 11, 21 and 23 rejected under 35 U.S.C. §103(a) as being unpatentable over Beach in view of Chesson, Koutroubinas and Coveley. Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been established.

Appl. No. 09/753,227  
Nortel Ref. No. 12917SS  
Amdt. Dated 04/26/2006  
Reply to Office Action dated October 26, 2005

First, with respect to claim 11, Applicants incorporate the arguments set forth in section (C) that multiple FCSs are not taught or suggested by the cited references. Moreover, based on the dependency of claims 4, 9, 11, 21 and 23 on independent claims 2, 10 and 20, believed by Applicants to be in condition for allowance, no further discussion as to the grounds for traverse is warranted. Applicants reserve the right to present such arguments in an Appeal is warranted.

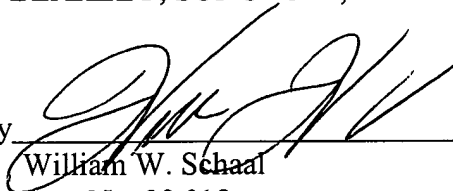
Withdrawal of the §103(a) rejection as applied to claims 4, 9, 11, 21 and 23 is respectfully requested.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: April 26, 2006

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Susan McFarlane

April 26, 2006

Date